

**Claims**

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1. A network hub structure for connecting network elements of a first WDM network supporting a first bit rate WDM data stream to other network elements on a second optical network supporting a second bit rate data stream which is substantially a multiple  $n$  of the first bit rate; the hub structure comprising:

- a multiplexing system comprising a plurality of multiplexing units, each multiplexing unit being arranged to multiplex  $n$  first WDM data streams into one second data stream, and

- a switching unit arranged, in use, to selectively cross connect any  $n$  first WDM data streams originating from one or more of the network elements of the WDM network destined for any same one of said other network elements to one of the multiplexing units for multiplexing into one said second data stream.

2. A network hub structure as claimed in claim 1, wherein the first bit rate WDM data streams are 1 Gbit/s Gigabit Ethernet data streams, and the second bit rate data streams are 2.488 Gbit/s SONET/SDH (OC48) data streams.

3. A network hub structure as claimed in claim 1, wherein each multiplexing unit is arranged to de-multiplex an incoming second data stream from the second network into  $n$  outgoing first WDM data streams destined for network elements on the first WDM network, and the switching unit is arranged to cross connect said outgoing first WDM data streams to a WDM unit if the network hub structure for multiplexing the outgoing first WDM data streams onto the first WDM network.

4. A network hub structure as claimed in claim 3, wherein each multiplexing unit comprises a tagging unit for tagging each first WDM data stream, and for allocating a wavelength to each outgoing first WDM data stream based on tags on the incoming second data stream.

5. A network hub structure as claimed in claim 1, wherein each multiplexing unit is incorporated in a Line Interface Card interfacing to a core hub on the second network.

6. A network hub structure as claimed in claim 5, wherein the network hub structure further comprises a plurality of Trunk Interface Cards disposed before the switching unit for interfacing to the first WDM network.

15. A method for connecting network elements of a first WDM network supporting a first bit rate WDM data stream to other network elements on a second optical network supporting a second bit rate data stream which is substantially a multiple  $n$  of the first bit rate;

18. A method as claimed in claim 17, wherein the method comprises the steps of tagging each first WDM data stream, and allocating a wavelength to each outgoing first WDM data stream based on tags on the incoming second data streams.